

JULY, 1961



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AMATEUR RADIO

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VK3WI: Sundays, 1930 hours EST, simultane-
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7085 Kc.

VK3WI: Sundays at 1000 hours EST, on 7145
Kc. and 3575 Kc. Intrastate hook-ups
taken on 7115 Kc.

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EDITORIAL



AMATEUR RADIO IS A WAY OF LIFE

Amateur Radio to many of us has
become a way of life. Unlike other
hobbies, Amateur Radio provides
a vital contact with the other man—
whether he be your countryman or
from some remote part of the world
—a contact which opens the gate for
an international understanding of
the other man's problem in a way
which all the newspaper, broadcast
programmes, television programmes
and other mediums cannot surpass.

As a hobby which can be conduct-
ed from your own home it provides
in an instant that contact with the
outside world which would take
hours, days, weeks, months and per-
haps years to make by other means.
This contact opens the gate to free
thinking about "the way the other
man lives"; it takes you to his
"garden" and he to yours; it gives
you an insight into his way of living
as compared to yours; and above all,
it gives you an oral international
communication unique to your
hobby.

This way of life must never be
left to "drown"; it is a way of life
which we, as Amateurs, have as a
legacy from those early pioneers
who paved the way to make such
unique communication possible at the
press of a switch. To this end we
should be vigilant in every phase of
our art in order that our require-
ments are always available to us
and that we give to our hobby what
we expect to gain from it.

The Wireless Institute of Australia
is proud to represent the Aus-
tralian Amateur Service in all its
problems. What concerns you will

be its concern. What it can achieve
for you will be yours. But it must
have your moral and financial sup-
port, and you can encompass these
requirements by remaining a mem-
ber and encouraging others to join.

RECONNAISSANCE

In the summer and spring Amat-
eurs the world over turn to the out-
doors for recreation and the healthy
pursuits of outdoor activity, some of
which is given to maintenance on
the station aerial systems which are
a hardy task in the autumn and
winter seasons.

July is getting well into winter
with dark, wet mornings when the
rain and dew doesn't dry out until
midday and the cold evenings start
with the sinking of the sun around
fishish. July is the commencement of
that three-month winter period when
time can be devoted to the shack and
all those things which the warmer
months could not drive you inside
to do.

There would be few Amateurs
who could honestly say that he had
nothing to do with his hobby other
than to walk in, sit down, switch
on his rig and have a number of
QSOs throughout the year without
some thought to "other things he
wanted to do in connection with his
hobby."

The winter months is the time to
do these things so that more time
in the open is available when the
warm months return. So take stock
of that list of "things to do" and
get them done during July, August
and September. By September
spring is here again and the out-
door life calls.

FEDERAL EXECUTIVE

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CS-U



AG-9U

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S-88



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AMATEUR EQUIPMENT

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TX1

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KNOW YOUR CAPACITY

E. J. CAWTHON,* VK5JE

IN a recent issue of a popular radio publication the author of a certain article described how he had experienced considerable trouble with his c.r.o. and had eventually found "leaky" capacitors to be culprits. His comments suggest that there are probably many more obscure faults being experienced by constructors who are blissfully pinning their faith in the capacitors manufactured many years ago.

I have a vivid memory of having received a packet of unused capacitors from a W2 friend just after the war and being curious about their breakdown voltage decided to "megger" them. To say that I was amazed to find the majority of them showing a leakage around the one megohm mark is putting it mildly—I hope the dustman has never tried to use them!

The article on the c.r.o. started my train of thought working again, so recently I decided to go through my junk box and do some more testing. I am certainly glad I did, because over 60% of them have now been discarded. Readings of 0.5 to 5 megohms were quite common and I can only assume that this state of affairs must exist in hundreds of other junk boxes.

For the experienced constructor it is a matter of where the capacitor is placed in the circuit as to what degree of leakage can be tolerated and one which is unsuitable for anode coupling may be quite satisfactory in a low voltage circuit.

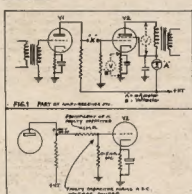
LEAKAGE VARIETY

Recently a class of new recruits to our art were required to construct an experimental two-stage amplifier and an opportunity was taken to demonstrate the wisdom of pre-testing all capacitors prior to installation. The circuit was somewhat similar to that shown in Fig. 1, using a 6V6 output tube but it could represent any amplifier or the output stage of your receiver. The set was wired using a new capacitor which read "infinity" and the anode current of the 6V6 was approximately 30 mA. consistent with reasonable quality. The capacitor was removed from point "X" and the "suspected" capacitors inserted with the result that the anode current varied from 30 up to 80 mA. with attendant severe distortion. I'm willing to bet that under normal circumstances the coupling capacitor would be the last item to be suspected and one can imagine the feverish changing of tubes, checking of resistors and allied components in an effort to cure that distortion.

Should we find it inconvenient to insert a milliammeter in the anode circuit, as shown by "A" in Fig. 1, then a check can be made by placing a voltmeter across points "B", taking care the meter is of sufficiently high resistance so as not to greatly disturb the normal working conditions of the cir-

cuit. Any increase in anode voltage caused by a faulty capacitor being inserted at "X" will cause the voltage readings to increase. Any capacitor suspected of being faulty should be put aside and tested as soon as possible, after which (if you decide to keep it for future use) suitably inscribe it with a "skull and crossbones" plus "poison" label.

A glance at Fig. 2 will show how the "leaky" capacitor in conjunction with the following grid leak forms a voltage divider from the h.t. plus voltage on the anode of V1 to ground, and under some circumstances will buck out the negative grid voltage. There can even be a positive voltage applied with the disastrous results previously mentioned.



"OPEN-CIRCUIT" TYPE

A rather rare specimen of the capacitor family is the "open-circuit" type which pops up occasionally to cause its own particular brand of bother. This can be, in the case of anode coupling, "no sound," or in a by-pass position, oscillation and unexplainable "screwy" effects.

Recently I acquired from a picture theatre an amplifier which had been discarded as unsatisfactory and thinking it would make a nice modulator, put it on the bench for test. It utilised a phase splitter driving a push-pull stage and it certainly did not give any where near its rated output, in fact one of the output tubes did not seem to be doing any work at all.

After checking all components for rated values, the only things left were the 0.1 μ F. coupling capacitors, and on a substitution test the one from the cathode of the driver was found to have an "internal open circuit". There is no sign of loose leads on the capacitor and it has a heavy moulded case, also it is a brand that I had not previously encountered any trouble with. I have a collection of these specimens but am glad to say they are rather rare unless, of course, they have been subjected to physical mal-treatment.

TESTING

Well let us see if there is any way in which we can easily test our capacitor provided it shows high insulation resistance. As we all know, a capacitor will acquire a charge, the value depending on the electrical size of the capacitor and the applied voltage, and that it will discharge on joining its connecting leads together. If we place our capacitor across a source of voltage and, noting the polarity, discharge it through a milliammeter we will get a certain "kick"—the degree of which will depend on the voltage used and the sensitivity of the meter. Care must be taken that we do not damage our meter and it may be advisable to use a "multimeter" and try the higher voltage scales first. If a reasonable deflection can be obtained on the meter, it can be used as a fairly good indication of capacitance value.

In the case of small values, the headphone test will be found very handy. The capacitor is momentarily placed across a suitable source of voltage and then headphones placed across it, whereupon a "click" will be heard—the degree of which will give a reasonable indication of its value. It is a good plan to check any capacitor against a few more of similar value and then we at least know it has some appreciable capacity.

It is advisable to keep the hands away from the leads to prevent any accidental discharge as false readings may be obtained.

With the increasing tempo of constructional work being undertaken by the Amateur fraternity, I hope that the foregoing remarks may save some of them hours of frustration and they will get the habit of "Test Before Installing" and "Re-check Occasionally".

This article has dealt with the older type capacitors and I hasten to add that very little trouble has been experienced with new capacitors bought over the counter in the last year or so.

VK-ZL CONTEST

PHONE: 30th SEPT. and 1st OCT.
C.W.: 7th OCT. and 8th OCT.
1000 hrs. GMT to 1000 hrs. GMT

WANTED! ARTICLES

Can you write an article for "Amateur Radio"? How about one for Hints and Kinks?

*40 Seaforth Avenue, Somerton Park, S.A.

MODIFICATIONS TO THE BC348 RECEIVER

J. P. MOORE, GAIKER

FOR about two years after being licensed the receiver in use at G3IKR was a BC348. True, it had had minor modifications carried out, such as removal of the generator, rewiring of the heaters and the addition of an extra audio stage. Basically, however, it was still a BC348 and as such had several drawbacks, viz.: (i) Lack of selectivity; (ii) Rather noisy, especially on the h.f. bands; (iii) No bandspread; (iv) Did not tune two Amateur bands (21 and 28 Mc.).

After about two years, the performance, which had been quite good originally, began to fall and the noise level increased. It was felt that some of the capacitors were no longer as good as they might be. Accordingly, the decoupling capacitors in the r.f. and mixer sections were removed and were in fact found to be of low resistance, and therefore useless. It was decided that, if good results were to be obtained once more, the receiver would have to be virtually completely re-built. At the same time, a number of alterations to overcome some of the drawbacks mentioned could be carried out.

coil boxes were removed by undoing the screws on top of the chassis, removing the switch rod, and unsoldering the various connections.

In each of the r.f. and mixer coil boxes, a 1" hole was drilled and fitted with grommet as shown in Fig. 2(a). The wire which originally went to the grid top caps of the valves were removed from inside the cans, and pieces of new wire arranged to pass through the grommets. Plenty of spare wire was left for ease in connecting up, the leads being cut later to the exact length required. It was necessary to screen the grid wire of the 6AK5 from the grid pin to the coil box—in some cases this might not be needed.

The sides of the oscillator coil box were next removed. The 15K ohm mixer cathode resistor was replaced by a miniature 5K ohm potentiometer mounted in a convenient place on the front of the box (i.e. the side nearest the front of the receiver). The coil boxes were then replaced. (Note: If the bandspread modifications are to be carried out they should be done at this stage.)

the changes in valve and circuit capacities. This was done by using a signal from the station frequency meter, adjusting the calibration first with the oscillator trimmer and then the r.f. and mixer trimmers for maximum response using the "S" meter as an indicator. The 5K ohm potentiometer in the mixer cathode was adjusted to give maximum signal-to-noise ratio on the h.f. band. It was adjusted by ear and found to be not too critical.

The rebuilding of the "front end" alone gave a very worthwhile improvement in signal-to-noise ratio.

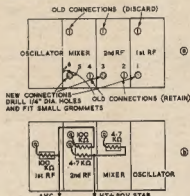


Fig. 2.—(a) Connections to the coil packs viewed from the front of the receiver. (b) Rear view of the coil packs showing the connections.

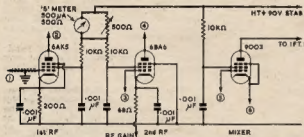
CONVERSION TO DOUBLE SUPERJET.

Changing the receiver to double conversion involved a fairly extensive rebuild. First, all the wiring and small components following the first i.f. transformer were stripped out, leaving only the valve-holders and i.f. transformers in position. The last i.f. transformer was, however, removed and replaced by the third i.f. transformer (85 Kc.) from a BC453 Command receiver.

A small sheet of 18 s.w.g. aluminium was cut to fit the space formerly occupied by the generator and on it were mounted the two remaining BC453 85 Kc. i.f. transformers, a crystal holder, and octal and B7G valve-holders.



Fig. 3.—Underneath view of the new "front end" sub-chassis showing the positioning of the valve-holders and screens, 18 s.w.g. copper screens, 1 in. deep projecting about $\frac{1}{4}$ in. beyond each valve-holder. Soldered to centre spigot and pin 4 in each case as well as to chassis at both ends.



The modifications to be described were done in three stages with some considerable time interval between the second and third. Readers may, of course, carry them all out together, and this is probably the best plan. The three stages were:

- (1) Rewiring the "front end" using more modern valves (Fig. 1).
- (2) Rewiring the remainder of the set and conversion to a double superhet (Fig. 4).
- (3) Modification of the coil packs to provide bandspread on 7, 14 and 21 Mc. as described in "The Short Wave Magazine" for Dec. '53.

The present article deals with stages (1) and (2) only.

NEW VALVES FOR THE "FRONT END"

The small sub-chassis carrying the 6K7 r.f. valves and the 6J7 mixer was removed entirely, care being taken to preserve the wire which goes from the anode of the mixer (pin 3 on the 6J7) to the first i.f. transformer. The four

A new sub-chassis was constructed from 18 s.w.g. copper as shown in Fig. 3. Aluminium would be equally suitable, but if copper is used the small valve-holder screens can be soldered directly to the chassis.

Three ceramic valve-holders (polystyrene or p.t.f.e. would do just as well) were mounted as shown and the small screens soldered in position. A very small blowpipe was found to be better than a soldering iron for this operation. (Great care would be necessary if polystyrene or p.t.f.e. holders were used.)

The first three stages were wired up according to Figs. 1 and 2(b). Small disc ceramic capacitors were used for by-passing, and all resistors were 1 watt rating. The new sub-chassis was then screwed in position and connected up to the coil packs and power supplies. It should be noted that the uppermost of the two connections at the front of the oscillator section goes to the 6.3 volt heater supply. The lower connection goes directly to the stabilised 90 volt supply.

It was found necessary to re-align the r.f. section of the receiver after carrying out these alterations due to

The three-position switch on the front panel was removed and a 5K ohm wire-wound potentiometer mounted in its place as r.f. gain control. The combined a.f./r.f. potentiometer was removed and replaced by a megohm audio gain control. A single-pole toggle switch was installed for a.v.c. on/off control. The output valve-holder was replaced by an octal type for a 6J5 audio stage. The output transformer was removed and a small sub-chassis cut from 18 s.w.g. aluminium to take its place; on this were mounted a B7G valve-holder and a small potted output transformer taken from the BC453. The circuit was then wired up as shown in Fig. 4, group boards being used where possible for the small components.

The use of the original 915 Kc. b.f.o. is not really recommended, but when the modifications were carried out an 85 Kc. b.f.o. coil was not available. The 915 Kc. b.f.o. is quite stable and produces a T9 note, but as the main interest at G3IKR is telephony working, the b.f.o. has never been altered. For serious c.w. work a variable injection b.f.o. at 85 Kc. is recommended.

The value of R_x in the b.f.o. anode circuit was found by trial to give optimum injection and depends upon the circuit layout. A value of 68K ohms is suggested as a start.

No details of the audio stages are given as some people like 10 watts of hi-fi, others being content with a low power stage driving headphones only.

The circuit used in the writer's receiver incorporates a "Selectoject," an EL91 being used as a low power output stage giving ample volume with a 5" speaker.

In spite of previous articles to the contrary, a 1 Mc. crystal is perfectly satisfactory as a second oscillator, although in fact a 500 Kc. crystal will work equally well. Accurate 1 Mc. beats are produced throughout the tuning range which are useful for band edge marking. The frequency can be adjusted to exactly 1 Mc. by adjustment of the trimmer across the crystal. The other trimmer in the second oscillator circuit should be adjusted to give sufficient injection; its setting is not at all critical.

Re-alignment will be necessary after these modifications have been carried out. Originally the receiver was re-aligned using the station v.f.o. and the "SW" meter, as no proper equipment was available. It was afterwards checked using a wobulator and oscilloscope and found to be very near the optimum position. No details for re-alignment are given as it is felt that those who carry out these modifications will have the necessary "know-how" and probably the equipment required to do it satisfactorily.

The provision of bandspread has been fully described elsewhere¹ and will not be dealt with here. Suffice it to say that the modification is very worthwhile both as regards actual bandspread and the increased performance effected by the better L/C ratios which are obtained.

RESULTS

Results have been better than expected, although it was unfortunate that a standard BC348 was not available for direct comparison. On the DX bands the modified receiver compares favourably with an AR88 as regards signal-to-noise ratio and sensitivity and runs it a close second for selectivity, the main disadvantage being lack of variable selectivity. After three years' use the writer is still unable to work all that he hears, probably due to the long wire aerial which is in use. Ninety-seven countries have been worked, mostly on 21 and 28 Mc. phone with comparative ease. On the latter band a modified RF24 unit, using 6AG5 valves, feeds into the receiver on 7 Mc.

¹ "Bandspreading the BC348," M. A. Ryan (K1VD), "Short Wave Magazine," Dec. '53.

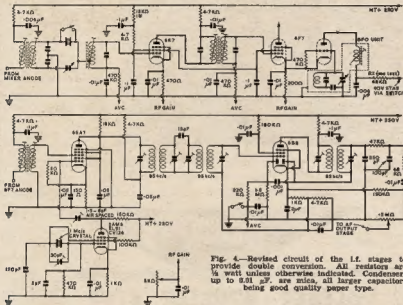


Fig. 4—Revised circuit of the I.F. stages to provide double conversion. All resistors are $\frac{1}{2}$ watt unless otherwise indicated. Condensers up to 0.01 μ F. are mica, all larger capacitors being good quality paper type.

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REMEMBRANCE DAY CONTEST

12th and 13th AUGUST, 1961

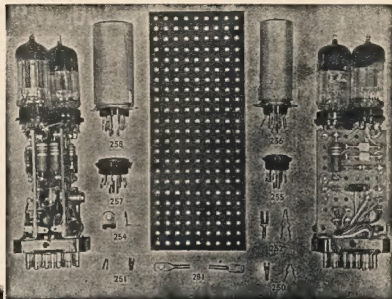
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|----------|------------------|-------------------|----------------------|---------------------------|-------|-------------------------------|------------------|-------------------------|------------------------------|--------------------------|---------------|
| 2062 | 80 | 290 265 | 115 TAP 105 | 6.3 C.T.-2.25 | 25 | 3 2 | 3 1/2 | 2 1/2 x 3 1/2 | 2 1/2 x 3 | VLN 31 | |
| 2063 | 80 | 340 315 | 135 TAP 125 | 6.3 C.T.-2.25 | 29 | 3 3 | 3 1/2 | 2 1/2 x 3 1/2 | 2 1/2 x 3 | VLN 31 | |
| 2064 | 125 | 340 315 | 135 TAP 125 | 6.3 C.T.-2.25 6.3-2.25 | 16 | 4 15 | 3 1/2 | 2 1/2 x 3 1/2 | 2 1/2 x 3 1/2 | VLN 34 | |
| 2065 | 150 | 290 265 | 115 TAP 105 | 6.3 C.T.- | 6 | 16 | 5 30 | 3 1/2 | 2 1/2 x 3 1/2 | 3 1/2 x 3 1/2 | VLN 34 |
| 2066 | 190 | 320 285 | 125 TAP 105 | 6.3 C.T.- | 6 | 7 | 6 8 | 3 1/2 | 2 1/2 x 3 1/2 | 4 x 3 1/2 | VLN 34 |

Note* — Effective Transformer Series Resistance referred to Secondary

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FURTHER NOTES ON THE BC221 FREQUENCY METER

ALAN H. REID,* VK3AHR

THE BC221 ("Bendix") Frequency Meter is certainly a very valuable instrument in the Ham shack. Apart from its main purpose in life, it is useful for lining up tuned circuits, as a source of audio frequency tones, as a v.f.o. for the transmitter, etc., etc. An article by VK2AGU in "A.R." last November discussed the accuracy of this meter and, in the hope that I can add something to this interesting subject, I offer some further comments.

To my mind, it seems quite pointless discussing the accuracy statements published by the manufacturer at the time these meters were put out. It is a long time ago, and at least some of the operating hazards mentioned are not encountered in Ham use. Rather I prefer to make my own calibration; this is not such a long job as it might sound, as accurate calibration is required only from 3500 to 3700 Kc. My method, as given below, is based on Models "AF" and "AL", but I believe it applies to all meters of the BC221 type.

RE-CALIBRATION

First of all, inspect the meter closely for mechanical deficiencies and clean off any signs of corrosion. With a beat note audible in the headphones, check that all controls, etc., are free of noise and that the unit is "solid" electrically. The h.t. power supply should preferably be regulated and the meter farmed up for at least 15 minutes before proceeding with calibration. Actually, I allow at least one hour stabilising time.

With the station receiver tuned to WWVH 15 Mc. and with its b.f.o. off, pick up some output from the meter by means of a short length of wire attached to the BC221 antenna terminal. This wire may be several feet long and is draped in the vicinity of the station receiver front-end. There should be no need to connect it electrically to the receiver antenna terminal although this might be permissible if it turned out to be necessary.

Turn the BC221 mode switch to the "crystal check" position and a beat note should be heard in the receiver. This is the 15th harmonic of the 1000 Kc. crystal within the meter, beating with the carrier of WWVH; it should not vary when the frequency meter tuning dial is moved or when the station receiver is detuned. If no beat is heard, check your coupling arrangements; if still no beat, then either your crystal is zero beat with WWVH (as it should be) or well off frequency.

The nameplate on the front of the meter is held on with four screws. Remove this and you will see a screw-driver adjustment which is a small variable capacitor wired directly across the 1000 Kc. crystal. Turning this should allow you to hear both sides of the beat note in the receiver. Set accurately to as close to zero beat as you can estimate and replace nameplate. This final setting should be done during the interval that WWVH is not

sending out an audio frequency tone. This interval occurs every fifth minute, during which the one-second ticks remain and a voice and code announcement is given out. The standard crystal within the BC221 is now set to 1000 Kc. to a high order of accuracy.

Now to check how the calibration of the instrument has stood up against the shocks, temperature and humidity changes and general abuse of the last couple of decades. The calibration book lists ten "crystal check points" in the low band and fourteen in the high band. When the meter was ready for calibration in the factory, the corrector was, no doubt, left untouched in one position, probably the centre of its range, throughout the entire calibrating procedure. The readings on the dial of all these check points would then have been noted and printed on the bottom of the relevant pages of the calibration book, as well as against the respective frequencies in the body of the book. After this, no doubt all the other readings in the book were filled in using external known frequencies at the required close intervals.

It seems to me important to note that, when the meter was brand spanking new, all the C.C.P.'s would have been "spot on" when compared with the readings in the book, once the corrector was set to any one of them. The corrector is fitted, of course, to allow for changes in value of the two oscillator inductances and for capacity changes (in the tuning capacitor and elsewhere) that would undoubtedly occur with time. Should the working range of this corrector get too far over to one side or the other, it may, incidentally, be centralised by two parallel pre-set capacitors (one for low band and one for high band) mounted at the side of the chassis. See VK2AGU's article for further details of this.

All BC221's I have used, and probably all such units in use today, require correcting to the various C.C.P.'s as one proceeds from the bottom to the top of each range. The calibration book says "correct at the nearest check point and go right ahead," but what does the thinking Ham do if two neighbouring check points disagree by a sig-

nificant amount and he wishes to establish a frequency somewhere in the middle? For instance, one meter I owned was 3 Kc. off the C.C.P. at 14,667 Kc., after correcting accurately at 14,000 Kc. Re-calibration was obviously desirable when working around 14,300 Kc. My present BC221 happens to agree within about 300 cycles at the points just mentioned so I just split the difference when setting the corrector and take the readings in the book as sufficiently accurate.

It is apparently not well known that there are many other C.C.P.'s, throughout the range of this frequency meter. These are genuine, usable crystal check points and I have a schedule of 40 of them throughout the low band and 45 in the high band. Many others of weaker intensity could also probably be identified and used.

The following table shows the five listed C.C.P.'s between 3500 and 3666.7 Kc., each with its approximate relative output and make-up details.

| C.C.P. No. | Het. Fund. Freq. | Rel. Output mW. | Het. Harm. | Xtal. Harm. |
|------------|------------------|-----------------|------------|-------------|
| 34* | 3500 | 34.0 | 2 | 7 |
| 35 | 3571 | 0.3 | 7 | 25 |
| 36 | 3600 | 3.4 | 5 | 18 |
| 37 | 3625 | 0.2 | 8 | 29 |
| 38* | 3666.7 | 25.0 | 3 | 11 |

* Listed in calibration book.

This table shows, for example, that one would expect to hear the 5th harmonic of the heterodyne oscillator beating with the 18th harmonic of the crystal, at an intensity of about 3.4 mW. in the headphones. This will occur at 3600 Kc.

The above five frequencies covering the Ham bands are probably sufficient to enable the preparation of a large-scale calibration curve for the meter over this range. I would expect this curve to give readings, at 3.5 Mc. within 250 cycles of the true frequency and to retain this accuracy, under Ham conditions, for years. A loss of accuracy would be made evident, if and when it occurred, by the necessity to use the corrector when moving to the higher check points, after setting on that at 3.5 Mc.

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REMEMBRANCE DAY CONTEST, 1961

A handsome perpetual trophy is awarded annually for competition between States inscribed with the names of those who made the supreme sacrifice, and so, perpetuating their memory throughout Amateur Radio in Australia.

The name of the winning Division each year is also inscribed on the trophy. In addition, the winning Division will receive a suitably inscribed framed photograph of the trophy.

Objects

Amateurs in each Call Area (this includes those in Australian Mandated Territories and Australian Antarctica) will endeavour to contact Amateurs in all other Call Areas (VK1 and VK2 are considered to be the one Call Area. Likewise VK5 and VK8.)

Date of Contest

12th and 13th August, 1961.

Duration

From 1800 hours E.A.S.T., 12th August, to 1759 hours E.A.S.T., on 13th August, 1961. A period of 15 minutes' silence will be observed by all stations on 12th August, immediately prior to the start of the Contest when an appropriate broadcast will be made from VK3WIA and relayed by the Divisional Stations.

RULES

1. There shall be four sections to the Contest:

- Transmitting Phone.
- Transmitting C.w.
- Transmitting Open.
- Receiving Open.

2. All Australian Amateurs may enter the Contest whether their stations are fixed, portable or mobile, but only members of the W.I.A. are eligible for the Awards. Portable-mobile operation is defined as transmitting and/or receiving equipment which is not connected to any private or public power mains or plant.

3. All Amateur frequency bands may be used, but no cross-band operation is permitted.

4. Amateurs may operate on both phone and c.w. during the Contest (e.g. phone to phone, c.w. to c.w., or phone to c.w. and vice versa), but may submit an entry for only one of the above Sections listed in Rule 1.

An Open log will be one in which points are claimed for both phone and c.w. transmissions.

A contestant transmitting on phone but receiving on c.w. must enter for the phone section (and vice versa). Refer to Rule 11 concerning entry in logs.

• The Federal Contest Committee of the Wireless Institute of Australia wishes all Australian Amateurs and Short Wave Listeners to participate in the Annual Contest which is held to perpetuate the memory of those Australian Amateurs who gave their lives for their country during World War II. It is held on the week-end nearest to the 15th August, the date on which hostilities ceased in the S.W.P.A.

5. Only one contact per station per band is allowed and arranged schedules for contacts on other bands is not permitted.

6. Only one licensed Amateur is permitted to operate any one station under the owner's call sign. Should two or more operate any particular station, each will be considered a contestant and must submit a separate log under his own call sign.

Contestants operating stations other than their own shall be referred to, for the purpose of these rules, as "substitute operators". Their operating procedure shall be as follows:

Phone contacts: Substitute operators will call "CQ Remembrance Day" followed by the call sign of the station they are operating and the word "log" followed by their own call sign.

C.w. contacts: Substitute operators will call "CQ RD de" followed by the group call sign comprising the call sign of the station they are operating, an oblique stroke, and their own call sign.

Contestants receiving signals from a substitute operator will qualify for points by recording the call sign of the substitute operator only.

7. Entrants must operate within the terms of their licences.

8. **Cyphers:** Before points may be claimed for a contact, serial numbers must be exchanged and acknowledged. The serial number of five or six figures will be made up of the RS (telemetry) or RST (c.w.) reports plus three figures starting from 001 for the contact and which will increase in value by one for each successive contact. If any contestant reaches 990, he will start again with 001.

9. Entries must be set out as shown in the example, using only one side of the paper, and wherever possible standard W.I.A. log sheets should be used.

Entries must be postmarked not later than 2nd September, 1961, and addressed to the Federal Contest Committee, W.I.A., Box 851J, G.P.O., Hobart, Tas.

10. Scoring will be based on the table shown:

SCORING TABLE

| | | To | | | | | | | | | |
|------|-------|-----|-------|-----|-----|-------|-----|-----|-----|--|--|
| | | VK0 | VK1-2 | VK3 | VK4 | VK5-8 | VK6 | VK7 | VK9 | | |
| From | VK0 | 1 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | | |
| | VK1-2 | 6 | 1 | 2 | 3 | 5 | 4 | 6 | 6 | | |
| | VK3 | 6 | 1 | 1 | 3 | 2 | 5 | 4 | 6 | | |
| | VK4 | 6 | 1 | 2 | 1 | 3 | 6 | 5 | 4 | | |
| | VK5-8 | 6 | 2 | 1 | 3 | 1 | 5 | 4 | 6 | | |
| | VK6 | 6 | 1 | 2 | 4 | 3 | 1 | 5 | 8 | | |
| | VK7 | 6 | 2 | 1 | 4 | 3 | 5 | 1 | 6 | | |
| | VK9 | 6 | 1 | 2 | 3 | 4 | 5 | 6 | 1 | | |

Note.—Read table from left to right for points for the various call areas.

In addition a bonus of 25 points may be claimed for the first contact in each call area on 50 Mc. or above.

11. All logs shall be set out as in the example shown and in addition will carry a front sheet showing the following information:

Name.....Section.....

Address.....Call Sign.....

Claimed Score.....

Declaration: I hereby certify that I have operated in accordance with the rules and spirit of the Contest.

Signed.....

Date.....

All contacts made during the Contest must be shown in the log submitted (see Rule 4).

Entrants in the Open Section must show phone and c.w. contacts in numerical sequence.

12. The right to disqualify any entrant who, during the Contest, has not observed the regulations or who has consistently departed from the accepted code of operating ethics.

13. The ruling of the Federal Contest Committee of the W.I.A. will be final. No disputes will be entered into.

14. Certificates will be awarded to the winners of the phone, c.w., open and receiving sections in each call area (Northern Territory will count as a separate call area). There will be no outright winner for Australia. Further Certificates may be awarded at the discretion of the Contest Committee.

The State to which the Perpetual Trophy will be awarded shall be determined in the following way:

To the average of the top six logs shall be added a bonus arrived at by adding to this average, the ratio of

EXAMPLE OF TRANSMITTING LOG

| Date/Time E.A.S.T. | Band | Emission | Call Sign | RST Nr. Sent | RST Nr. Rcvd. | V.h.f. Bonus | Points Claim. | — |
|--------------------|-------|----------|-----------|--------------|---------------|--------------|---------------|---|
| Aug. 61 12 1802 | 7 Mc. | A2 | VK5XU | 30001 | — | — | 2 | — |
| 12 1805 | " | " | VK6RU | 56004 | — | — | 5 | — |
| 12 1115 | 50 " | " | VK4RZ | 47135 | — | — | 25 | 3 |

Note.—Standard W.I.A. Log Sheets may be used to follow above form.

EXAMPLE OF RECEIVING LOG (VICTORIAN S.W.L.)

| Date/Time E.A.S.T. | Band | Emission | Call Sign Heard | RST Nr. Sent | RST Nr. Rcvd. | Station Called | V.h.f. Bonus | Points Claim. | — |
|--------------------|-------|----------|-----------------|--------------|---------------|----------------|--------------|---------------|---|
| Aug. 61 12 1802 | 7 Mc. | A2 | VK5XU | 30001 | — | VK3XU | — | 2 | — |
| 12 1805 | " | " | VK6RU | 56004 | — | VK6RU | — | 5 | — |
| 12 1115 | 50 " | " | VK4RZ | 47135 | — | VK5QR | 25 | 3 | — |

Note.—Standard W.I.A. Log Sheets may be used to follow the above form.

logs entered to the State Licences, multiplied by the total points from all entries

Example:

Average of the top six logs +

(Logs Entered × Total of Points)
(State Licences × from all Entrants)

Acceptable logs shall show at least five valid contacts.

The Trophy shall be forwarded to the winning State in its container and will be held by that State for a period of twelve months.

Note. The F.C.C. emphasises the need for strict observance of Rule 9 in the Transmitting Section and Rule 3 in the Receiving Section.

RECEIVING SECTION

1. The Receiving Section is open to all Short Wave Listeners in Australia, but no Transmitting Station may enter.

2. Contest times and logging of stations on each band are as for transmitting.

3. All logs shall be set out as shown in the example. Logs must show first the call sign of the station calling (not the station being called), the serial

number sent by it and then the call sign of the station being worked. The scoring table to be used is the same as that used for transmitting and points must be claimed on the basis of the State in which the receiving station is located. A sample is given to clarify the position.

It is not sufficient to log a station calling CQ, nor is it permissible to log a station in the same call area as the receiving station.

For purposes of the Contest, VK1 and VK2 are considered to be in the same call area, likewise VK5 and VK8.

4. A station heard may be logged once on phone and once on c.w. for each band.

5. Club receiving stations may enter for the Receiving Section of the Contest, but will not be eligible for the single operator award.

However, if sufficient entries are received a special award may be given to the top scoring receiving Club station. All operators must sign the Declaration.

6. Awards. Certificates will be awarded to the highest scorer in each call area. Further certificates may be awarded at the discretion of the Federal Contest Committee.

1960 "CQ" C.W. Results

Number groups after call letters denote the following: Band, final score, number of QSOs, zones and countries.

| | | | | | |
|--------|----|---------|-----|----|-----|
| VK2GW | A | 326,696 | 593 | 76 | 118 |
| VK2APK | 14 | 55,944 | 282 | 28 | 44 |
| VK3ADB | A | 45,360 | 214 | 34 | 36 |
| VK3YD | 14 | 5,800 | 60 | 17 | 23 |
| VK3TL | 14 | 5,618 | 78 | 13 | 13 |
| VK3APV | 14 | 5,460 | 67 | 14 | 14 |
| VK3XB | 14 | 5,148 | 58 | 15 | 18 |
| VK4SW | 14 | 5,080 | 52 | 18 | 22 |
| VK4XW | 7 | 3,600 | 68 | 10 | 10 |
| VK5MF | A | 3,228 | 108 | 23 | 21 |
| VK5MF | A | 2,920 | 28 | 21 | 19 |
| VK5RX | 14 | 9,780 | 76 | 17 | 28 |
| VK5LD | 7 | 720 | 15 | 7 | 9 |
| VK6RU | A | 280,878 | 486 | 73 | 114 |
| VK7SM | A | 58,238 | 238 | 41 | 51 |
| VK7KA | 14 | 13,912 | 110 | 21 | 26 |

★

First All Asian DX Contest

Results of the First All Asian DX Contest, conducted by the Japan Amateur Radio League, are now to hand. The outright high score was 4X4JU with 55,000 points. Australian scorers were (M indicates multi-band operation).

| | | | |
|-------|----|------|------|
| VK9XK | M | 2640 | pts. |
| VK5NO | M | 2087 | " |
| VK2GW | M | 1470 | " |
| VK6RU | M | 567 | " |
| VK7WA | M | 342 | " |
| VK7JB | M | 240 | " |
| VK5JT | M | 24 | " |
| VK2DI | 28 | 220 | " |
| VK4SU | 14 | 368 | " |
| VK5KU | 14 | 72 | " |

SECOND ALL ASIAN DX CONTEST

1. Contest Period: 36 hours from 1000 GMT 29th August, 1961, to 1000 GMT, 27th August, 1961. (During the last week-end, August, every year).

2. Contest Call. Station participating in this Contest may call "CQ AA".

3. Bands. The following Amateur bands may be used during the Contest: 3.5, 7, 14, 21, and 28 Mc.

4. Type of Emission: C.W. only.

5. Type of Competition: (a) Single band, single operator; (b) Multiband, single operator.

6. Equipment. There is no limit to the number of tx's and rx's allowed and competitors may use the maximum power permitted under the terms of their licence.

7. Serial Numbers. (a) For DX stations: The serial numbers of five figures will consist of the RST reports plus two figures of their age. (Example: If your age is 35, number will be RST plus 35.)

(b) For YL stations: The serial numbers of five figures will consist of the RST reports plus two figures of "00" in the last two figures.

8. Points an Multiplier: (a) For Non-Asian stations: A contact only with an Asian station will count one point and a multiplier of one for each Asian country on each band.

(b) For Asian stations: A contact only with a non-Asian station will count one point and a multiplier of one for each non-Asian country listed in DX and WAZ country lists.

9. Scoring: (a) The score of each single band is the country multiplier for that band, multiplied by the total contact points on that band.

(b) The total of all band score is the same of country multiplier of all bands, multiplied by the sum of contact points on all bands.

10. Awards: A certificate will be awarded to following operators of every country: (a) For single band entry: highest scoring operator on each band; (b) For multiband entry: the highest scoring three operators.

11. Special Award: In addition a special prize will be awarded to the highest scoring single operator on multiband in each continent.

12. Deadline: All logs must be postmarked not later than 30th September, 1961. Send all logs directly to J.A.R.L. Contest Committee, P.O. Box 377, Tokyo Central Japan.

Details of log pro forma may be had on application to the J.A.R.L. Contest Committee or the Federal QSL Bureau.

A MESSAGE FROM HONG KONG

As President of the Hong Kong Amateur Radio Transmitting Society, I (VS8DS) would like to take this opportunity which has been kindly offered by VK3YQ, to send greetings to the President, officers and members of the Wireless Institute of Australia, in this the 31st year of our existence as a Society.

Although small in numbers, we lack nothing in interest, and our enthusiasm makes up for our smallness, enabling us to play a not insignificant part in the field of Amateur Radio. Nevertheless we look to the Wireless Institute of Australia and the New Zealand Amateur Radio Transmitting Society as being the natural leaders in the field of Zone 3. We, like you, hope that in combination with other Societies in the area it will be possible to create further activity under the auspices of the International Amateur Radio Union for the benefit of all Amateurs in this zone.

Of particular significance in this respect and which I would like to draw attention to at the present time, is the very vexed question of intruders in Amateur bands, for it seems to us that it would be better by far if we could pool the information which becomes available on these intruder stations, so that a case could be made to the International Amateur Radio Union for Zone 3 as a whole rather than representations on a solely national level.

As members of an international body we are constantly reminded of the good fellowship which is automatically engendered in the pursuit of our hobby, and in our constant contact with each other across natural and international boundaries. In this connection I trust you will forgive me if I draw your attention to a particularly fine example

of the spirit which has recently occurred.

In Hong Kong we publish a small newsletter, and we are very pleased to see occasional extracts reprinted in the more ambitious magazines of the larger organisations. This news-sheet of ours is intended primarily for local consumption, and when recently an appeal was made to local members for back numbers of various publications to complete the Society's volumes, the fact that this item would also be read by others was entirely overlooked.

To our surprise, a few weeks later a parcel of "QSTs" containing all the missing numbers arrived unannounced with the compliments of the Secretary of the Amateur Radio Relay League. This was indeed a surprise, and does demonstrate the international fellowship which exists in the field of Amateur Radio, but a further surprise was in store for us, for via VK3YQ, we have now received quite independently from Mr. J. Lancaster, the Federal Secretary of the W.I.A., the back numbers of "Amateur Radio" which we also were missing. As an unsolicited and totally unexpected example of the spirit of Amateur co-operation, I consider this would indeed be very hard to beat.

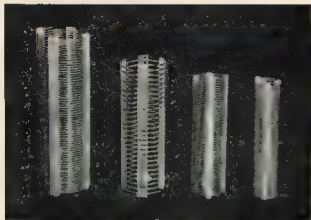
In wishing you all the very best of luck and plenty of DX from Hong Kong, may I quote a few lines from Kipling which used to appear in our pre-war magazine under the title of Radio Amateur, which expresses far better than I can, the spirit of Amateur Radio:

Only the master should praise us
Only the master should blame
No-one shall work for money
No-one shall work for fame

[The above was taken from a speech by VS8DS, recorded in Hong Kong by VK3YQ, and printed by "A.R.L." for general interest of all Australian Amateurs.—Ed.]

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AIR-WOUND INDUCTANCES

| | Diam. | Turns per Inch | Length | B. & W. Equiv | Price |
|----------|--------|----------------|--------|---------------|-------|
| No. 1-08 | 1" | 8 | 3" | No. 3002 | 5/3 |
| No. 1-16 | 1" | 8 | 3" | No. 3003 | 5/3 |
| No. 2-08 | 1" | 8 | 3" | No. 3006 | 6/3 |
| No. 2-16 | 1" | 8 | 3" | No. 3007 | 6/3 |
| No. 3-08 | 1" | 8 | 3" | No. 3010 | 7/4 |
| No. 3-16 | 1" | 16 | 3" | No. 3011 | 7/4 |
| No. 4-08 | 1" | 8 | 3" | No. 3014 | 8/5 |
| No. 4-16 | 1" | 16 | 3" | No. 3015 | 8/5 |
| No. 5-08 | 1 1/2" | 8 | 4" | No. 3018 | 10/6 |
| No. 5-16 | 1 1/2" | 16 | 4" | No. 3019 | 10/6 |

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- * Highest efficiency—lowest weight per watt.
- * Easy to solder heavily silver-plated tags.
- * Above or below chassis wiring.
- * Audio capacity: From 10 to 250 watts.

| List No. | Audio Watts | Watts RF In. | Max. Sec. Current | Overall Size L. W. H. | Weight lb. oz. | Price inc. Tax |
|----------|-------------|--------------|-------------------|-----------------------|----------------|----------------|
| UM0 | 10 | 20 | 60 mA. | 2 1/2 x 2 1/2 x 3 1/2 | 2 8 | £5 16 0 |
| UM1 | 30 | 60 | 120 mA. | 3 1/2 x 3 1/2 x 3 1/2 | 5 8 | £7 12 6 |
| UM2 | 60 | 120 | 200 mA. | 5 1/2 x 4 1/2 x 5 1/2 | 11 8 | £10 13 3 |
| UM3 | 120 | 240 | 250 mA. | 5 1/2 x 5 1/2 x 5 1/2 | 14 8 | £12 12 6 |

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AMATEUR ACTIVITY AT 1961 ALICE SPRINGS SHOW

The second annual show was held on 18th and 20th May in bright, warm, 70 degrees weather, under cloudless skies.

Bill VK6EW set up his gear in the machinery pavilion (so-called, but a better name would have been the miscellaneous pavilion. Two calves were in a corner barely 30 feet away and did they give any QRM? Ask anyone, we worked! Those poodies wanted their Mums, and they told the world—literally!

Considering the modulated milk bottles already mentioned, spark-plug testers, saw machines and a portable chain-saw, among other things, we did quite well, working 37 stations in 11 countries.

Ralph VK8NK popped into the pavilion occasionally to help Bill and me (VK8UX) keep the rig on 21 Mc during the day, and on 14 and 3.5 Mc. at night. Graham Jenkins who is waiting for his full ticket to be issued, enjoyed a couple of goes at the mike.

To maintain public interest (which was the object of the set-up), only those stations with good signal strengths were QSOed. Quite lively interest was shown by the public and several people enjoyed saying "Hello" to somebody in a distant land, but a surprising number suffered from "mike fright". The interest shown by teenagers, both girls and boys, was gratifying.

On Saturday, Ken VK8KR told us that Gee Ham VK8QZ was at Ayers Rock with a Type 3 on 80 metres and would be in The Alice on Sunday. Sure enough, when I went out to the Motel, there he was stringing wires from hills and trees with gay abandon. Later that night he put an f.b. signal down into VK3 to keep an eight-way sized.

Stations worked from the Show included a number from VK2, 3, 4 and 5 on various bands. ZL8NB joined in a round-eight of eight stations on 80 mc on the Friday night, and VK8RO was worked on 14 megs.

21 Mc DX included 487GE in Central Ceylon and who had to survive some QRM. K8SHA, who was 50 for 60-minutes, W6WYR, who had to rush off to watch his favourite TV show; KH8DJV, Kimo, who was very happy because it was pay day, and kept up the chatter for 1 1/2 hours; 8B all the way from Portland, Oregon; ZL1VP, VK8PI, K8YCI who came back to us on c.w.; WA6LCK, who gave us a fine contact for the Internet; public V81FE, David's 28 watts put in a tremendous signal—he had been climbing up and down his tower in 85 degrees and high humidity to adjust his cubical quad, but the result was worth it; Z81JR was cooking a very early breakfast, but was putting out an 88 plus signal at the same time. W8QAE rounded off a couple of days operating.

Bill's rig was a Geleco front-end feeding a buffer and an 813 final at 100 watts, and an H.R.O. receiver. The serials were dipoles fed to lengths of water-pipe which were hoisted and tied to the tennis-court floodlight stand—giving about 40 ft.

I reckoned that I had spark-plugs in my ears at the end of the second day, but we felt that we had given Ham Radio a boost up here in the Centre.



STATISTICS RE DXCC

To work DXCC is not an easy task due to the lack of Amateur stations in various countries. If it is assumed that you can work one per cent. of the Amateurs in a particular country, then you should have no difficulty in obtaining the following contacts: CE, CM, CO, CNR, CP, CV, CTA, CQ, DL, DM, EA, EI, F, FA, G, GI, GM, GW, HE, HC, HK, I, IT, JA, KA, KH, KI, KP, KX, KZ, LA, LU, OA, OE, OF, OG, OH, PA0-PI, PY, SM, SP, TG, TI, VE, VK, VU, W-K, XE, YN, YU, YV, ZE, ZL and 4X4. But this amounts to only fifty-four countries that to reach DXCC it will be necessary to work say two per cent. of the remaining Amateurs in the other countries which have fifty or more licensed stations. These countries would be DU, EL, HI, HP, IR, K8, VK8, VQ2-N, VQ4, YS and 48T.

By so doing you have added another eleven countries thereby making your total sixty-five, but you still have to work an additional thirty-five countries which will have fifty or less Amateur stations. To obtain DXCC is a difficult task from the statistical point of view (which neglects the m.u.f., language difficulties, and the XYL). Therefore it is a hallmark to show DXCC on your QSL card so congratulations to those who succeed.

Book Review

"A TO Z" IN AUDIO

By G. A. Briggs with R. E. Cooke as Technical Editor.

This 224 page book provides a comprehensive technical dictionary of terms applied in audio. It is very well illustrated and many engineers would find it a very useful reference book. Several cartoons amply express a point and the clear diagrams help the text.

Various illustrations are actual do-it-yourself projects, so the book has a practical as well as a theoretical use. It would be a very useful adjunct to the audiophiles library and could prove a popular addition to any library. The reader will gain from reading this book. The price is 26/6, post free.

Our copy was supplied by McGill's Authorised Newsagency, 135 Elizabeth St., Melbourne.

"HOW TO USE GRID DIP OSCILLATORS"

By Rufus P. Turner (No. 245 in the Rider publication series).

This 103 page booklet covers in ten chapters the full scope of that most useful instrument, the g.d.o. Every Amateur should be familiar with the g.d.o., but after reading this well prepared and amply illustrated booklet, he would be in a better position to obtain the maximum advantage from this very versatile piece of gear.

This is a practical booklet and each chapter shows how a specific measurement may be made. Whilst the writer shows how the measurement is to be made, this reviewer considers that it would be an advantage to also state the limits of inaccuracy in the method adopted, however this comment should not detract from an excellent publication that the progressive Amateur should have for ready reference. The price is 26/8 plus 1/- postage.

Our copy from McGill's Authorised Newsagency.

"RADIO AMATEUR'S HANDBOOK"

38th Edition, 1961

After thirty-five years of publication by the American Radio Relay League, it becomes difficult to review a book that has won such world-wide acceptance, so this review will be directed towards those who already possess an old edition of the A.R.R.L. Handbook. If the reader does not already have a copy it can be said that this book is a must for every Amateur shack. It is also a book widely found in other locations where electronics are used, and research laboratories, schools, libraries, universities, etc., all find it a valuable reference source.

The twenty-five chapters have become standardised during the years as regards their format, but each edition sees the addition and deletion of various data. For this reason it is well worth while purchasing the latest edition, even though you may already have an earlier copy.

The first three chapters follow the principle of briefly telling the facts regarding the electrical cornerstones of radio, capacity, inductance, and resistance. The fourth chapter outlines the

semi-conductor devices which are playing an increasing important task in electronics.

Construction of receivers is fully dealt with in chapter five and well illustrated diagrams make the construction an easier task. Chapters six to twelve deal with all facets of transmitters, and the associated transmission lines, aerials, and wave propagation are covered in the next three chapters.

V.h.f. receives special attention with a further three chapters devoted to this art. Then chapters 19 to 24 cover the other parts of Amateur Radio such as mobile, test gear, measurements, and b.e.l. and t.v.i.

The final chapter (25) is particularly useful as it covers vacuum tubes, and this index provides a most comprehensive data sheet which is an excellent reference source.

The A.R.R.L. Handbook, if intelligently used, will provide the construction details, theory, and general information required by every Amateur Radio operator. It is a standard reference work which is an essential part of every Amateur shack.

Our copies from McGill's Authorised Newsagency, 135 Elizabeth St., Melbourne, and Technical Book & Magazine Co., 293 Swanton St., Melbourne. Priced at 46/3 plus postage.

"TUBE AND SEMICONDUCTOR GUIDE"

By T. J. Kroes, Phillips Tech. Library

This 180-page booklet, 6 x 9 inches, is a most valuable addition to any library or organisation which deals with electronics.

It comprises eight sections plus a translation text in French, German and Spanish. The sections are: interchangeability list, valves radio, cathode ray tubes, transmitting tubes, microwave

KSTQN TO CO-ORDINATE CIVIL DEFENCE

Robert L. Spencer, Sor., KSTQN, 507 Santa Clara Ave., has been appointed group co-ordinator of Civil Defence with the additional duty of Air-Sea Rescue Unit Information Officer for Peninsula Group 3, Civil Air Patrol.

The announcement was made by Major E. W. Parmenter, commander of the First Air-Sea Rescue Unit based at the Port of Redwood City. Parmenter, who lives at 1574 Alameda, said the newly-named liaison officer between Civil Air Patrol and Civil Defence will co-ordinate the air-sea search and rescue activities of the local organisation with city and country directors of Civil Defence and disaster mobilisation for drills and exercises and radiological detection.

Robert KSTQN, a Redwood City business executive, last September was appointed radio officer for the Redwood City Civil Defence and Disaster Communications network and is a graduate of the O.C.D.M. radiation detection and instrumentation course. He is married and has one son, Robert Jr., 12, presently stationed in Germany where he is attached to the 24th Engineer Battalion of the Army.

50 Mc. W.A.S.

| Call | Cor. Add. | Call | Cor. Add. |
|--------|------------|--------|------------|
| | No. Contr. | | No. Contr. |
| VKZVJ | 15 | VKRDW | 3 |
| VKZFM | 6 | VKRRB | 6 |
| VKXIH | 4 | VKSHIT | 7 |
| VKZGP | 3 | VKZAEZ | 10 |
| VKZABC | 8 | VKZKA | 11 |
| VKZVW | 3 | VKZKJ | 11 |
| VKZSG | 18 | VKZACL | 14 |
| VKZAX | 20 | VKZSD | 18 |
| VKZSU | 3 | VKZHO | 17 |
| VKZRY | 2 | VKZCEA | 18 |
| VKZLC | 1 | VKZWH | 15 |

tubes, industrial types, miscellaneous, and semi-conductors.

Each section contains recommendations for the preferred tube type, a classified list, base connections, socket diagrams, and general data pertaining to that tube type. A most useful feature is an explanation of the tube designation code, which covers European and the E.I.A. system.

This is a well prepared and solidly bound booklet, and this no doubt reflects the hard wear it will take when purchased. It will prove a most valuable addition to all who have to concern themselves with tubes (valves) and rapidly require to ascertain their salient characteristics, then decide upon the preferred type.

Our copy from Phillips Electrical Industries Pty Ltd. Copies should be available from any Phillips office or large booksellers. Price 11/6 plus postage.

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Correspondence

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

ROSS LULLY TRUST

Editor "A.R." Dear Sir,
It is appreciated that letters to the Editor concerning specific discussions can only be granted limited time and space, but I trust that this very important subject has not to date been dispensed with.

With the exception of a brief reference to a letter by 42AA, as mentioned in David 34V's most recent correspondence, it would seem that the V.H.F. Group in Queensland is as complacent as everyone else, including F.C.C., in regard to existing rules.

If the comments heard from other States towards the end of last season, and if the many differences of opinion locally are any indication, then the necessity of modifications must be undoubted, but on the surface, with the exception of letters and notes apparently accompanying contest logs, little concrete effort seems to have been made to develop generally acceptable changes.

This is the basis of the letter from 42AA to which David refers. It was compiled not as a singular effort, but consisted of the net result of joint opinions from all of the v.h.f. operators in Brisbane—those interested in the Ross Hull and those who see no value in operating under the present rules.

Unfortunately, although quite some months have passed, we have not been favoured with a reply, and it is to be hoped that these suggestions have not been summarily dealt with along the lines of the closing paragraph of F.C.C. presentation of the result in June issue of "A.R."

The contents of that letter are too lengthy to be repeated here, but suffice to say that for every change recommended, every justification possible has been given from our point of view as we feel it affects all States.

Let us not be unduly critical—the F.C.C.'s job is a most exacting and difficult one and if it is felt widely that changes are necessary, then let each of the V.H.F. Groups in the right thing and prepare in detail every change that members consider warranted and give all possible justification. After all, it cannot be ex-

pected that all the members of the Contest Committee would have the specialised knowledge and experience of V.H.F. Contests which makes us call for the changes.

Six detailed proposals must produce reasonably unanimous agreement, or at least provide a very definite basis on which to analyse requirements.

I have no doubt that F.C.C. would be only too willing to review arguments presented in this fashion—or should they require it—have no difficulty in finding representatives in each State who could quickly, together, even by correspondence, produce the alterations most generally accepted.

We have little enough time left now—when we consider the amount of work involved in altering rules and in publishing them—so let each of the Groups prepare concrete proposals rather than, with due regard to the excellence of their efforts concerned, stall vaguely in the air.

—D. B. Hughes, VK4BZ.

DECADE COUNTERS

Editor "A.R." Dear Sir,
Re AFDDI, who does the Magazine Committee think they are kidding? Presumably AFDDI stands for April Fool's Day (No. 1, or maybe April Fool's Dream No. 1. Maybe with another 9 tacked on to the £1 difference of the price, the story would look a little more convincing).

The idea of hooking a decade counter on to the communication Rx is technically interesting, but of course it's not new, and the practical solution bristles with problems. Counters are available commercially which count up to 10 mega, but at a price. Most have one for £200 sterling, you're interested.

In this application, the counter is only half the story. The h.f. oscillator would require to have superlative stability and the h.f.c. also requires to be of high stability, in addition problems of accurately centring the signal in the i.f. passband present themselves. Double conversion above 10 Mc. would be necessary and this would complicate the counting procedure.

The writer has started preliminary work on a decade counter MN28, which will be fed from a xtal locked converter with switched xtals for the h.f. bands a 1.8 Mc. It is proposed to use transistorised decades up to 10 kc and the last three decades will use valves.

I would be interested to hear from anyone else who is working along this line.

—I. P. Berwick, VK3ALZ.

OBITUARY

CHARLES WELCH WALKER, VK4CU

It is with deep regret that we record the passing of Charles Welch Walker, VK4CU, of Clifton, Qld., on 12th May, at the age of 62. Chas. also held the portable call sign of VK4DQ. Chas. was held in great respect and high esteem by the hundreds of Hams throughout the Commonwealth and New Zealand who had contacted him over the years on 80, 40 and 6 metres. He was a great exponent of v.h.f. and was well known for his portable work, having gained first place in the National Field Day, 23/8/51.

He was a member of the O.D. Timers Club (A.R.H.) and was inducted an Old Timer into his A.O.C.P. was No. 10 and was inducted on 24/10/54. He was associated in the very early days, transmitting on the broadcast band, with VK3KR, who is still active.

The great respect in which he was held by the people he so faithfully served in the town of Clifton was evident by the estimate of 850 people who attended his funeral. He will indeed be sadly missed on the bands.

He survived by his widow and three daughters.

KEITH HAWKES, VK4HT

Keith Hawkes, VK4HP, of 13 Railway Parade, Wynnum, who was born in Victoria on 14th March, 1934, was laid to rest in Hamant Cemetery on Tuesday, 30th May 1961. He became seriously ill last February.

Keith, who had been employed in the Telegraph Branch of the P.M.G. was known as a good c.w. man. He was extremely well liked in his section, being a worker for the "Sparks Club" of that section, and on hearing of his illness, his workmates presented him with a new 23 inch i.v. set. To his sorrowful mother and two brothers so the deepest sympathy of the W.I.A.

TED DODDY, VK6WH

HARRY TARBOTTON, VK6HT

It is with regret that we record the passing of Ted Doddy (VK6WH) and Harry Tarbotton (VK6HT).

Ted, particularly in the days following the First World War, was a great pillar of the VK6 Division. He held several offices in which he did yeoman service in the cause of Amateur Radio. He was President of the Radio Society which was originally the Subiaco Radio Club, for several years and wherever Amateur Radio existed, Ted was a great organizer and helper.

Harry Tarbotton spent most of his Radio days at Albany and was for many years so the avid and willing helper for the Institute. A couple of years ago, Harry gave Amateur Radio a rest, taking on a motor boat in his spare time.

VK6 owes much to both Ted and Harry and their passing within a week of each other was sad days for Amateurs in the West.

Our condolences are extended to Mrs. Doddy and her grown-up family, and to the relatives of Harry Tarbotton.

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"Did you say you were being troubled with oscillations—or osculations?"

SIDE BAND

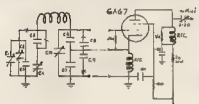
Bad Pounsett, VK2AQJ
6 Alice Street,
Queensbeyn, N.S.W

MIXER AND CONTROL CIRCUITS

AT VK3ON (Second Part of Series)

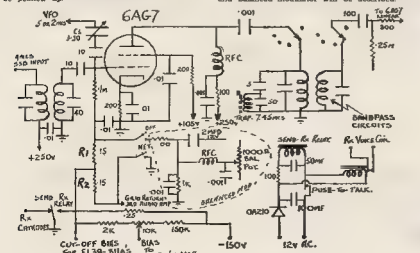
This latest evolution of the mixer stage uses a 6AG7 valve. The first edition used a 6J8 as infinite impedance mixer but the circuit was rather poor. The present circuit gives 13v. output for about 2v. of 8 mega. input. The output was measured by noting the start of grid current at the first linear stage which has variable grid bias 3-13 volts from a separate bias source (0A210 rectifier)

Double-tuned circuits are used where convenient to reduce spurious frequencies. Injection from the v.f.o. (6AG7) is controlled by the 30 pF. concentric trimmer C1. The correct setting (about 3 pF.) is such that there is almost no grid current flowing in R1. With the v.f.o. on 1.80 mega. (7.15 meg. operation) the spurious 7.4 meg. 4th harmonic signal increases rapidly if grid current flows and conversion conductance is near optimum with 7.4 mc. excitation just less than bias voltage (2v.). It may be better to switch in two concentric variables, one for 8 mega. operation and one for 2 mega.

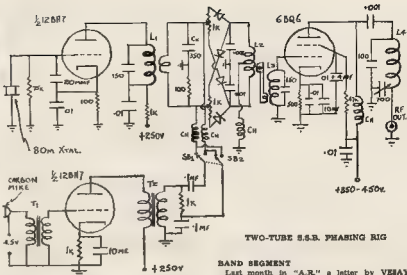


THE V.F.O. AT VK3ON

The band-pass circuits are switched, one for each band. Six-tuned plastic unshielded formers, 2 1/2 x 1/4 inch do a good job here. Fixed condensers of 10, 20, 30, 50 pF. are used for 50, 40 and 30 mc. bands. Slagger-tuning with close coupling gives good transfer across the whole range 3.5-5.5 mega. Across the 40 mc. plate coil is an absorption circuit tuned to 7.45 mega. (adjust with v.f.o. on 1.80 mega.) Using correct v.f.o. injection and this trap circuit, reduces spurious output from the tx to zero. Subsequent linear tuned circuits are three and each has a trimmer or tuning condenser to be peaked up.



VK3ON MIXER AND CONTROL CIRCUITS



TWO-TUBE S.B. PHASING RIG

BAND SEGMENT

Last month in "A.R." a letter by VE8AYE appeared concerning the 14,100 to 14,140 kc. segment of 80 mx 1 for one, and there are many supporters, thoroughly endorse the suggestion. By the very name lack of DX stations at the "top of 20," it seems that the W/K QRM has proven just too much for stations outside of the U.S.A. If we ALL use the lower 40 kc., the position will quickly become workable and it will not be very long before we will be enjoying contacts with the U.S. under similar conditions as prevailed before we "lost" that top 50 kc. I must say I was amazed to hear a W asking another W, "Why does the DX want to migrate to the low end?"

TWO-TUBE S.B. PHASING RIG

Or Get Your Friends' Feet With 7 Watall Leo Bolevert, W1HHR, has come up with the end-all of simplest sideband transmitters, this man, is the least! We have the S.B.B. A.R.A.'s journal "The Sidebander" (Feb. '61) to thank for this information.

This little rig is clean cut and wrung out to the very minimum of parts that will put out a clean 40 kc. signal. First off, the r.f. signal is fixed phased and so is the audio, but due to the fact that we are using a carbon mike with its limited audio band pass, it really works out fine for fixed phasing.

Measurements were made in actual operation and we came up with these figures:

- 1,800 cycles—30 db suppression
- 2,800 cycles—30 db. suppression
- 500 cycles—15 db. suppression.

This may not be commercial s.b., but it sure beats the pants off d.s.b.!

Construction of this unit requires no special parts and at that, the percentages are real loose. It is only necessary that the tuned circuits resonate at the operating frequency and that the audio coupling transformer have a 500 ohm output to the diode modulator. For this purpose I have used an ARCB r.p. output transformer.

It is important that as little as possible of the xtal oscillator voltage get into the fields of the coils L3-3-4. Keep the osc. coil L1 as

(Continued on Page 15)

PARTS LIST

- L1-35 turns No 30 wire Link, 12 turns No. 32 on cold end.
- L2-16 turns No. 28 wire. Link, 6 turns No. 30 to centre of coil.
- L3-32 turns No. 30 wire. Link, 6 turns No. 30 on cold end.
- LA-30 turns No. 30 wire on 1/4 inch coil form, slug tuned.
- Coils L1, L2 and L3 are wound on 1/4 inch coil form, slug tuned.
- All capacitors marked "M" are mica; all others can be ceramic.
- CX-350 pF. for 75 metres. One half capacity doubles frequency.
- T1-Carbon mike to grid transformer.
- T2-Plate to 6BQ6.
- Chd or 3 pie chokes (not critical).
- D1-D1N32, 1N64 or most any diodes providing they are matched.
- R1, R2-1,000 ohms, carbon pots.

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PREDICTION CHART, JULY '61

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NOTES

FEDERAL RADIO FREQUENCY ALLOCATION REVIEW COMMITTEE

Federal Executive of the W.I.A. is aware of reference to possible changes in Amateur Frequencies published in an overseas magazine. Pending announcement by the Post Master General of the recommendations of the Committee, it would be in the interests of the Amateur Service to refrain from making speculative announcements of this nature.

"PROJECT NEEDLES" PLANNED FOR THIS YEAR

"Project Needles," the U.S. proposal to put into orbit a belt of dipoles as passive reflectors, is scheduled to be implemented this year. This was announced at the Second International Space Symposium in Florence, organized by the Committee of Space Research of the International Council of Scientific Unions (C.O.S.P.A.R.).

The intended orbit is to be polar and the dipoles ("needles") are to be of copper. The height of the orbit above the earth's surface will be 1000 miles and the belt will probably remain near its original orbit for about a year. After that it will cease to be a useful reflector.

AWARD FOR G's

The Mullard Award for 1963 has been made jointly to Edith Bottomley, G5ONB, and Graham Thomas, G3OQT. The Award Committee considered that "The fortitude and courage shown by Miss Bottomley and Mr Thomas provided a fine example of personal service to the community."

They are both patients at St. Teresa's Home in Cornwall, one of the Cheshire Foundation Homes.

ARMY SIGNALMEN MAKE RECORD MARCH

Five Army Signalmen, recently undertook a record march in 1963. They marched a distance of 130 miles and took 6 1/4 hours to complete the arduous journey in full marching kit order. They broke the existing record by 4 1/2 hours and were joined over the last 12 miles by Ken Scott, VK3XJS, who had co-operated with the signalmen's unit, 604 S.S.L., last year in monitoring test calls from a mobile Army transmitter.

Of the Army signalmen's effort, Ken said: "These fellows were in an Air Force during the War and not in the Army." (At least the signalmen could not be classed as P.B.I.)

FEDERAL QSL BUREAU

The Malaysian Amateur Radio Transmitters' Society has submitted the following proposals to the I.A.R.U.

1. Power input should be restricted to a maximum of 550 watts to the final amplifier on 10, 15 and 20 metre bands.

2. No operation should have a separate segment at the lower end of the 10, 15 and 20 metre bands as follows: 10 mhz. 200 kc. to 10 mhz. 200 kc.

3. Traffic handling on the 10, 15 and 20 metre bands should be confined to c.w except in cases of a National Emergency.

All QSL cards for the Island of Aruba, Netherlands Antilles (PJ3A-), PJ3A-), and PJ3A-) should be sent to the QSL Director, Radio Club QSL Bureau, P.O. Box 43, Serco Colorado, Aruba, Netherlands Antilles.

VK1JLK seeks phone keys on the 7 Mc. band from 0730-0800 daily. He carefully tunes 7070-7100 kc. for calls.

Divisional Managers please note that cards for VK3JH, VK3JL, and VK3JM are routed to VK3J where his father, VK3ACM, will attend to same.

Robb Gurr, VK3BO, is now attending to QSL cards for VK3J, since the departure of Russ VK3XK.

The Taiwan Amateur Radio Club takes pleasure in the presentation of the Amateur B.V. Award Number One to Mr. R. A. Catmur.

VK3FY. Mr. Catmur's certificate, endorsed for c.w., was issued on 9th May, 1961. The W.I.A. and the Elizabeth Radio Club, of which Mr. Catmur is a member, take great pride in this accomplishment.

—Ray Jones, VK3JH, Federal QSL Manager

NEW SOUTH WALES

MEET MONTHLY MEETING

The attendees at the mid monthly meetings of the Division have improved greatly over the past few months, and an almost capacity audience was present to see the slides and hear the comments of Bill ZEO illustrating the activities of A.N.A.R.E. in Antarctica. Bill, it will be recalled, having two exposures into these regions, one to Macquarie Island and the other to Mawson, and was able to give the audience the benefit of his wide experience.

The slides were of excellent quality and with his comments all were able to appreciate the hazards of life in those regions and to realize that the fellows on these expeditions are doing an excellent job for Australia.

Further meetings are being arranged and are held on the second Friday of the month at Divisional Headquarters, 14 Atchison St., Crows Nest, and one such in July will be the playing of one of the new tapes, the slides and accompanying literature. Do not fail to be there at 8 p.m., an interesting and instructive evening is assured.

MONTHLY MEETING

Monthly meetings come and go over the years, and despite all our good intentions, some of the lectures heard recede into the background of our memory only to be recalled at some future date, possibly many years after. The lecture at the May meeting, however, was one which I doubt whether any of the large audience will ever forget, and was one which was full of the type of material which all Amateurs enjoy. Leo ZAC presented a discourse on Phasing. Phil Slobden presented in a manner which left no doubt in anyone's mind that there is a sideband generator which produces a signal that is not only rapidly extending but is more stable than many of the phasing rigs in common use today. Accompanied by ample sound circuitry, the information of the lecture was very detailed.

Following this feast, Keith ZBK gave a short talk on the new Barium-Titanate type of Filters which are now being developed here in Australia and which can be used in fact had with him an example of the use of such filters.

The vote of thanks was moved to the lecturers by the usually by A.I. Five new members were admitted to the Division at this meeting.

CLUBS

A new Club has been formed at the headquarters of the 2/9 A.A. Regiment at Haberfeld and will undoubtedly appear on the air in the near future.

The recently formed Orange Radio Club announces the acquisition of their call sign, VK3AOA, the transmitter being completed and operational.

All Clubs are invited to supply the Divisional Correspondent with information of their activities so that they may receive adequate publicity, which can only lead to increased membership. Remember the time lag in publication which is of course unavoidable, and have all information in to us by the first day of the month.

HUNTER BRANCH

Do-it-yourself lectures. This is the latest news from the Hunter Branch. I don't know how idea it was, but the evening of 12th May saw this novel arrangement put into practice. The Branch meeting listened to no less than five of our own members giving practical hints and tips on the use of their equipment. The speakers were Keith ZAKX, 75 tx modifications; Stuart ZAYF, test and measurement equipment for 2 mhz. and 10 mhz. bands; and Gordon ZEDJ, 2 mhz. Departmental requirements for mobile operation, and Gordon Sutherland, wave shaping with one control.

SILENT KEY

It is with deep regret that we record the passing of—

- VK4CU—C. W. Walker.
- VK4HP—K. Hawkes
- VK6HT—H. A. Tarbotton.
- VK6WH—E. A. Duddy.

The attentive audience included a welcome visitor, Bill ZCW and the following members and associates: VKs ZEL, ZAGR, ZCS, ZXT and ZPD. Helen Goss and her son, Stuart Mullin, Finlayson, Stobbs, Gray, Munn and Foster. Those who could not be present were Varley ZSP, Harry ZAM and Tony ZPD. Davis, Mac, McLeishan and Mac O'Brien. Even as I write this, I remember that one of the above names now is entitled to use a call sign, having pleasure in introducing our newest Amateur, John Gray, VK3ZJG. At long last, John has his call. At one stage he thought he was going to be losing it, but his powers came good in the end. I have no idea what gear John will be using, but Z calls pleased to have a look at his new rig.

At the meeting, the Varley could not be there on the last meeting night, but he did come along to Bill's most recent social gathering and has almost recovered from his recent illness. At least one of you are feeling better, Varley. You'll never guess whose car failed to start on the evening of 14th May at Bill's place. Well, perhaps Bill will tell you the details, but I can say that it was cracker night and that the member waited until all the other boys had gone and that the N.R.M.A. patrolman was waiting for him with a car.

A few minutes before all this, we had been standing in the middle of the road admiring the new ZET beam which answers to the name of ZET. It was a very nice beam, and other appendages Bill certainly has some hardware above his roof. It works through a Gortz and a KLY on a.s.b. with efficiencies ease on that same evening. We are told that Mr. Hall inaugurated communication by breaking into a QSO and having a few words with him. How about that! He was late to bed that night.

Harry has heard Charlie ZARV on 7 Mc. c.w.? Harry says it is true and Jack, second op, at Ron's (ZASJ) has a card for him from an LA7 mobile marine. Ken ZAC is still putting out a 1.5 signal on 7 mhz. and he has been on 20 as well. The c.w. contacts with California please ZAC. He is still putting out a 1.5 signal on 7 mhz. and he has been on 20 as well. The c.w. contacts with California please ZAC. He is still putting out a 1.5 signal on 7 mhz. and he has been on 20 as well.

It is a pity that the transmitterless President, Stuart, is building a talking box. Whether this will be used for Monday night broadcasts is not clear, but it is going to be a very nice affair. With a 1.5 signal on 7 mhz. and he has been on 20 as well. The c.w. contacts with California please ZAC. He is still putting out a 1.5 signal on 7 mhz. and he has been on 20 as well. The c.w. contacts with California please ZAC. He is still putting out a 1.5 signal on 7 mhz. and he has been on 20 as well.

The expectant associate, Gordon, must be sure of his exam. result and apparently intends going for the more pretty soon because he is looking for a certain crystal. He is putting out a 1.5 signal on 7 mhz. and he has been on 20 as well. The c.w. contacts with California please ZAC. He is still putting out a 1.5 signal on 7 mhz. and he has been on 20 as well.

Is it true that Bob from Westy has a barage balloon ready for one end and a big hook on the other? It is a pity that the transmitterless President, Stuart, is building a talking box. Whether this will be used for Monday night broadcasts is not clear, but it is going to be a very nice affair. With a 1.5 signal on 7 mhz. and he has been on 20 as well. The c.w. contacts with California please ZAC. He is still putting out a 1.5 signal on 7 mhz. and he has been on 20 as well.

Chris ZPX is looking with longing at a certain band at Haberfeld and through his back gate. He is sure it would make an ideal companion for the present signal iron structure. He is putting out a 1.5 signal on 7 mhz. and he has been on 20 as well. The c.w. contacts with California please ZAC. He is still putting out a 1.5 signal on 7 mhz. and he has been on 20 as well.

VK3AWI has been coming through more strongly each Sunday, and some of the boys listen to this transmission in preference to VK3CO. He is putting out a 1.5 signal on 7 mhz. and he has been on 20 as well. The c.w. contacts with California please ZAC. He is still putting out a 1.5 signal on 7 mhz. and he has been on 20 as well.

At least one local associate has told how much he appreciates the work done by

the net and to make liaison with outside bodies. The control station will be rotated amongst the net as each one will get practice in control work.

Don SARN has had a QSO with Bill 4ZPR and Peter 3XK on 16 Mc. He is not satisfied with the r.f. feedback in the tx. Don't worry Don, it will come good in time. Brian 3JN is on 144 after getting bugs out of his converter. Brian at 5 p.m. have checked all the pieces if your receiver is giving trouble. Brian found the strafe in faulty components in the converter.

John 3ARJ's 3 mc tx is going on 144.8; the converter is coming up soon. Noticed in last month's notes the mighty 3 mc sig reported by 3ARJ. It was a 3 p.m. have checked all the pieces if your receiver is giving trouble. Brian found the strafe in faulty components in the converter.

John 3ARJ's 3 mc tx is going on 144.8; the converter is coming up soon. Noticed in last month's notes the mighty 3 mc sig reported by 3ARJ. It was a 3 p.m. have checked all the pieces if your receiver is giving trouble. Brian found the strafe in faulty components in the converter.

QUEENSLAND
Greetings chapel I am looking forward to keeping this column of interest to everyone, but I must, I will need your assistance. What about setting me some direct or pass through interesting event? Send direct or pass through Secretary Bill 4WX.

I guess you won't mind me keeping the Council's letter to the President, J. Barker, 4PR; Secretary, W. Wishart, 4WX; Treasurer, K. Eric, 4DG; Federal Councillor, A. Hinkler, 4AO; and the 4th Vice President, G. Frengely, 4ZRB; Librarian, K. Long, 4WV; Div Sub-Editor, P. H. Brown, 4PR; Disposables Officers: E. Fell, 4E, G. Guttmann, 4RL; C. Cooper, 4BF; A. Wals, 4AW.

As you can see, some of the load has been taken off Jim 4PR's shoulders. We held a Council meeting at 4PR's QTH on Friday, 15th. Unfortunately, we were not able to start promptly at eight and we only stopped for breath, not even for supper, a little after eleven when it was time to go home, and leave the building up to Jim. We can guess the secret of Jim's beauty, smile and well rounded figure if the bountiful supper his QTH provided in the building up to Jim. However, we left a lot of business unfinished, so if some things seem to move slowly, chaps, it's time that it is sealing us and we are not competent to start it. We are not competent to start it. The State Service Union Rooms on Friday, 26th, with over thirty present, including three new members, and a few that haven't been seen for a long time. I was very pleased to see Bill 4WX Morse, who I can believe takes his licence back to the 19th and who will be back on the 21st. I was also very pleased to see one of Bill 4WX's class instructors, was present, as also were our Ipswich stalwarts, without whom our meetings would be incomplete.

The business of the meeting was over and Vince 4E was to give his a.s.b. lecture by 8.45 p.m. The time flew, with questions, until just after ten and Vince had only dealt with reception and a.s.b. the "how" and "why" of a.s.b. reception and ways to improve your present receiver were the main points covered. Vince's a.s.b. transmission was there with everyone who knows on for all to examine and admire.

Thanks Vince. We are looking forward to your next talk in July. I suspect the discussion will be raised in this first talk. I want it again one day.

By the time you read this the Queen's Birthday Convention at Nambour will have been held and we will be looking for you and means to further improve the next Convention.

Bill 4WX has the suggestion that we hold the next Convention in the North again, but at Easter, and so far the idea is being received favourably. It is not anticipated that the next Convention will be held in the North, but that both shows can work together on "scrambles," etc.

FURTHER LECTURES

Now about our monthly meeting lectures and talks for the rest of the year. In July, Vince 4VJ will continue on a.s.b. transmission. Probably the next will be "The Short Wave" by Pat 4KB, "Doc Morrison, C.M.D. on his overseas trip," Mr. Hinkler of the Queensland University will give up some notes for our meetings and we have arranged for a practical demonstration, in which all may, and should, take part, of "Mouth to Mouth" resuscitation. If you have any other what marliners are, I'll explain further next month. No, not mannequins!

Wouldn't it be a good idea to have events so that everyone has plenty of notice. If you know of an expert in a field that is related to radio or the Institute, tell a Council member that

we may co-opt him, and don't be backward if you are capable yourself. What about the "Short Wave" etc., don't forget that Secretary Bill is opening the rooms at 7 p.m., so that you may have a chin-wag if you have some spare time before the meeting.

PERSONALITIES

Our new Secretary, Bill Wishart, 4WX, who calls himself a "timor" but has a pretty youthful approach to the job, held his position many years ago. Other "old timers" would have known him as 4WT. Should the new Secretary have a meeting, Bill would be pleased to receive a letter from any of the old gang. His address is 89th North Avenue, St. Lucia, Brisbane, phone 7-3741.

Ken Keith 4DG was heard working CTRFQ on 15 mc and making sure his QTH was correctly received. You'll get your QSL card, Keith. Stan 4BA is back with us and we hope to see him at the July meeting. Doubtless we shall have a job to utilise his talents. Wide Bay and Burnett, also Central Division, will be pleased to hear of him as one who helped their formation. Even 4EJ is to be congratulated on the efficient manner in which he is handling our disposals gear. Often the package is dispatched after receiving the letter ordering it. What do you think of the service, country members?

Ken 4WT, our Librarian, reports that the R.S.B. Bulletin should be out in a few weeks. We will let you know when it becomes available. We are missing a few 1958 "QSTs" and "QCRs". What about sending around the shack chaps and returning those and several other issues. Ken is going to award the crossed dipoles to Hal 4DD and Bob 4RW for promptness in payment. James 4B will be being run pretty close. Any more contenders for June and July?

Eric 4XR conducts the Wide Bay and Burnett Group on Saturday afternoon hook-up on 11.55 Mc, at 1400 hrs. He conducts these hook-ups in an excellent manner and keeps to a tight schedule.

Most of the credit for the Convention will probably go to Eric, Barry, Jim and others of W.B. and B. Harkness 4B had "How I rode out the typhoon" or "Anchors Aweigh" by "Doc" 4MOI. Who are the persons using the 21 Mc Amateur Band for private a.s.b. phone patches?

Unfortunately, I won't be able to deal here with all the items you may realise that I have to have this news in Melbourne before the 8th, but if you hear of anyone in hospital or in bed, please let me know so that we will pass the word around.

Also, country members, don't forget if you are in Brisbane for the Show, contact Bill. I myself at someone because we would like to hear from you, or meet you.

Finally, I've probably used up my news for the rest of the year, so what about sending some news and helping me make this column successful. My phone number is 98-588-477.

TOWNSVILLE

It is to be hoped that very soon 4WT's tx will have a new home, so that there will be no grumbling from the State and calling in will be able to net on the proper frequency, 1543. Because these tx's are atal controlled and after several years of work, where the chaps calling in have it to the last minute to switch on and therefore their v.f.o.s have not settled down. Hence they hear one chap, whose v.f.o. is thus out of tune, and then another, whose one all are spread around between 1538 and 1545 kc. This causes the a.s.b. chaps to moon as they listen to the confusion. The State will to the two a.s.b. chaps who operate on 1543 all during the Sunday 4WV net. Hard enough with present conditions without others using the frequency.

Can anyone inform me re propagation of the radio signals where do they wander before arriving at my antenna, because on checking 15 mc I have to get 4WV to 15 mc up to 20 seconds ahead of WWV with JZY in the middle. This has been noticed often around 5.45 p.m. E.A.S.T. Would like others to check this.

The boys in Townsville have a further breathing space as now the situation of the State will be "The Short Wave" by Pat 4KB, "Doc Morrison, C.M.D. on his overseas trip," Mr. Hinkler of the Queensland University will give up some notes for our meetings and we have arranged for a practical demonstration, in which all may, and should, take part, of "Mouth to Mouth" resuscitation. If you have any other what marliners are, I'll explain further next month. No, not mannequins!

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Conditions are certainly bad on the Z boys as no break-throughs on 98 Mc for over six

weeks. Their rigs are lying dormant, may stop them on to get out of the net. Last Sunday after 15 Mc had dropped out, it was possible to hear the boys from further north ragchewing on 15 Mc, but they moon around in the night. The boys are in good for southern VKs seem to skip them and veer away to 2L.

With the passing of 4CQ a local a.w.l. was called in to get out of the net. The net on 7 Mc. on Monday, 15th May. Made a special call upon me to give me the details, and hopes one of these days to become an Amateur radio operator. The boys are in good for southern VKs seem to skip them and veer away to 2L.

SOUTH AUSTRALIA

The usual good attendance of members, standing room only, was evident at the monthly general meeting of the VKS Division for May, which, owing to the usual chairman (John 3JC) being absent on vacation, saw Phil 3NN acting in that capacity for the first time. The speaker was Mr. John Campbell, of the University Physics Department, and his subject was "Radio Astronomy." Mr. Campbell gave a most interesting and informative lecture, clear, direct, which meant that he covered a considerable amount of ground, and judging from the number of questions asked by the members at the conclusion of the talk, it was evident that those present had absorbed the subject particularly well, and were anxious to learn more. Mr. Campbell has continued at our meetings have been masters of their subject, and naturally have tended to the perfection. However, Mr. Campbell, certainly a master of his subject, did not attempt to sidestep any imperfections and was the first to point out that the resolving power of our eyes were vastly inferior to optical means as yet, but stressed the point that radio astronomy had earned it its name. He pointed out that being able to detect the presence of hydrogen in the heavens (important from our point of view) whereas this would not be possible from optical observation.

For one awful moment I thought that he was going to leave me holding the bag and ignore the Blackboard, which would have left me in a bit of a predicament. However, the whole lecture in this magazine, but occasionally he wielded the chalk, and with Council still firm in the chair, he was able to maintain a pleasant pace for a little work on the blackboard, but I missed out at this meeting, and surely it was a pity. The speaker's subject of thanks was aptly proposed by that genius of the spoken word, Keith (8WV to you) and was seconded by all present in no uncertain manner.

Practically no business (P.E. or otherwise) was transacted, although the recently mentioned letter from Pat 4KB on fringe area was taken up. It was stated that this matter was now at P.E. level, and for the moment there it will rest. The meeting closed around 9.45 p.m. with members, who were all of a virtuous wife satisfied with the fare provided, not their bare fare, the fare provided at the meeting.

Incidentally, talking about the fare provided at the meeting, it was stated that the fare provided was a good thing among the members for a get-together night in the middle of the year, a sort of a light relief from the usual business, you lecture, no nothing, but just a good chance to meet the other chap other than on the air and generally fraternise. Personally, I don't know how much work out, but it is worth a trial, and I submit it to those responsible for what it is worth. The reason that I am mentioning it is that I have been told that it is to Council personally, they would knock it over at once, if only on suspicion of the motive! Give a dog a bone! As a matter of fact, without labouring the point too much, it might not be a bad way of getting to know all the members of the Division better over the months. 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KEW MULTIMETER TK70B

SENSITIVITY—

D.C. 20,000 ohms per volt.

A.C. 8,000 ohms per volt.

RESISTANCE: 0-20K ohms.

0-200K ohms, 0-2 megohms.

Db. (up to 6,000 c.) to 22 db.

VOLTS, A.C./D.C.—

0-10, 0-50, 0-250, 0-500, and

0-1,000.

CAPACITANCE—

0.001 to 0.2 mfd.

Size: 5½" x 3¼" x 1½".

MILLIAMPERES D.C.—

0-500 uA., 0-10 mA., and

0-250 mA.

PRICE: £7/12/0 + 12½% S.T.

Supplied complete with instruction sheet and test leads.

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Attractive polished wooden case. Gilt legs. Size: 5½" x 3½" x 2½". Large attractive Dial. 99/6 each plus Pack and Post 2/6.

POWER DIODES

Type 5E4: 500 mA. 400v. r.m.s. (¾" diam., ½" thick), 7/6 each plus 25% S.T.

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populated, many VKs renewing QSOs with Eastern States and ZLs. Conditions occasionally have been very peculiar, signals appearing and disappearing in very short times.

Some of the contacts were 80 mx one night by a signal which had speakers jumping out of enclosures and Amateurs rubbing their ears. After sundry antennas were switched out, it was found to be SMOG/AM on the tanker "Hong Kong" somewhere in the Night. He informed us he was using two 413s in the usual dual antenna place on the ship. Just as well there were no more of them about. Alan 6AB has acquired a secret weapon which he will probably use in self defence.

OKO is regular on 80 as usual with Alan and some of the "gang". It appears that Katanising is a windy place to live in; what say Herb? VK8 Amateurs are appearing in out-of-the-way places. Almost DX in fact. A new call sign is RDG in Port Hedland and of course BTK 6AB is still heard on Sunday morning 80K. BTK in Norseman and EKJ in Albany are quite often heard on the lower bands. In fact we even hear that Jack 8BU is considering moving to Hobart to be closer to the DX radiation. Better take that 4-watt job with you next time you go to the caves Jack.

Have not heard 6BK much on the lower bands lately, but you have no doubt been kept busy at night Bill. The dozen of VK8 Amateurs, 6AG, has been having a spell in hospital, probably in QSO with the nurses, but is back home now. He is a very good operator and looking very fit. At present Wally comes on the air with his 122 set. Skipper 6WS, the G.O.B. who has been on the air with a lot of trouble and getting almost the DX. We do not hear 6JM as often lately, but he puts in a good signal when he does appear, except when the power supply "bods" mixed up with his aerial. Take care of that "marching girl" John.

Since TVL has appeared in VK8 many of the fringe area chaps have had much trouble suppressing harmonics, perhaps ZEL could give them a few hints. 6WL has been heard so often lately, but you have no doubt been more than most to I.I. proof his gear. We hope he overcomes it soon as he is missed when he is not on the air. The present 6GQs and some very good signals have been heard. I hope 6AB does not build his set too soon. When he does I will know how to keep him and open the window. Bob 8R has been on a.s.b. lately with his super set and Jan 6CL is on his way with d.s.b. reduced to a mere trickle. You back soon Ian with your seedling, etc., finished.

The slow more transmissions are still carried by a few stalwarts but more operators are needed to make it easier for all. GPH is the organiser but unfortunately is away from home every second week. 6GH does a stringing job with the news and manages to give a very interesting technical talk each Sunday morning. When this new shack (if proof?) of Wally 6AG is finished, we hope to also hear him giving the news from his new QTH.

The Geraldton Amateurs have not been heard very often lately, but that may be due to conditions, local signals being hard to hear at VK8. I hope VK8 6V will be on the air. Which reminds me, Roy 6RY has been concentrating on the Interstate mobile contacts; he works regularly into VK3 cars at about 4.30 in the morning. Even on the Interstate mobile, the Mt. Lofy road in S.A.—80 watts a.s.b. mobile. Also 6NT on a No. 19 set with an R.T. and 6Y on a driving licence. Victor Harbour. 6FF and 6ABN are two other active mobileers Roy has worked.

At the time of writing, it is with regret that we are losing the services of our key operator 73 for this month, 62CK per 6LS.

TASMANIA

At our May general meeting we were fortunate to have Paul 7ZAJ address us on transistor circuitry. He clearly demonstrated the advantages of the transistor circuit over the known valve circuits. Thank you, Paul, for such a down-to-earth lecture which could only be of help to us all. We will soon be welcoming Hugh 7DS as a metropolitan member.

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Hugh has been appointed to the staff of a very well known Government department with which Len 7LE has a working association. Merv. 7CL has made his presence felt on the air and has been a very enjoyable contact. It could be that more QRM will occur in the Hobart area as a result. It is good to hear you Merv. Ken 7TB has been mobile most nights during the first week-end and in June, Ted 7PJ has completed the erection of his quad antenna and hopes that conditions will improve. Some of you give me through trial and error. Tom 7AL has at last received permission from the Clarence Commission to erect a workshop, which will in due course enable Tom to come back on the air, so we can only hope that construction is effected quickly. Charles 7CH has had his annual holidays about the end of May.

Band conditions generally have been particularly poor during May and in fact the 80 mx band at night time has been the only band to provide contacts. Generally, 60 mx has been very good indeed, with plenty of DX to be had, including KWDGF and KWDGD, CKIRX, COITX, JAYL, VJEEZ and many more.

Our official Sunday morning broadcasts continue to be QRM free and I am in complete conclusion that this interference is deliberate, because of its regular continuance. If it is not deliberate, then we seek the co-operation of Amateurs generally to help to reduce the interference from 1900 to 1930 hours, and 715 Kc. clear from 1930 hours until the end of the transmission band.

Doug 7TD tells me he is making slow but some progress on his six-band mobile rig which we hope will be in service next summer. The 80 mx band is operating very well. The Fund-Raising Committee encourages you all to build up direction finding gear for either 3.5 or 3.7 Mc. and to be ready to show your readiness for next and ensuing summer activity, and while you are about it, why not build up a mobile rig as well? You will certainly have fun operating it.

At the June meeting of the Division, we were treated to three films on radio astronomy, all of which proved most interesting. In one film, we were told that the late Dr. G. G. Grote Reber was given a very honourable mention as a pioneer and present leader in this field. We were all the more delighted as the Doctor was to be awarded the D.F.C.

The VKT Division is seeking an Assistant Secretary to under-study Ken 7KA, who has definitely decided to relinquish the secretaryship and to devote his time to other work. Please volunteer, as Ken is only too happy to show you the ropes while still in office.

Merv 7TB has been up on the band again, and we hope this is the beginning of considerable activity from you, Merv. The R.D. trophy was again handed to our President, Tom 7AL, by Jack 7DS, the Acting Chairman of the Federal Contest Committee. While on the subject, remember that the other Divisions are really making a determined effort this year to take the trophy away from us. It is up to you to ensure that we retain the trophy, get your gear ready for the Contest next month.

Jack 7DS, the Acting Chairman of the construction of a two-channel stereo unit, with 10 watts per channel. 73, Len 7ZL.

NORTH WESTERN ZONE

Time has slipped by, finding you truly scratching to find something to write about since the 1967-68 year has been a busy one for helping me out in so many compelling notes for the last couple of issues whilst I was attending to some local duties. You set me a hard task Mac.

Our last meeting was held at the usual place and no less than 26 people put in an appearance. We were very pleased to see that ELLIOTT who has recently obtained his A.O.C.P. and also to Ted 7EJ who was back on the coast on business and turned up at the meeting to get his "handshake".

A nice letter was received from the Burnie Fire Brigade thanking the zone further for efforts put into their fire equipment.

It was announced that the meeting to be held on the 1st August would be the Annual Meeting and attendance of ALL members is requested. For a circle round August, on your calendar.

The July meeting promises to be very interesting, as Ken 7TB has been giving a talk on the fundamentals of sideband reception and transmission; so don't forget that date, 4th July, you possible future sidebanders. The July meeting has also been arranged for as a "massive" affair, so let's hope some surplus gear is forthcoming.

Ken 7TB is now a regular inhabitant of 80 mx. I do believe he has access to a nice tape recorder of one at least of his emissions. Not often that you get back what you transmit Ken. Charlie 7CH has been having troubles

with hot water circulation instead of r.f. for a change; I don't know whether link coupling would work there Charlie. S.W.I. Geoff Sharp is still receiving cards each meeting, so someone is listening chaps if we are not all on the air very regularly. I understand there is some activity in the zone with gear that might radiate signals on a m.f. or h.f. band, but the inter-town barrier in that region of the spectrum before the year is out.

Did anyone come up with a satisfactory answer to Mac's problem of the broken feeder? Perhaps link-coupling would work there Max.

Minimum 5/-, for thirty words.

Extra words, 2d. each.

Advertisements under this heading will only be accepted from Institute Members who desire to dispose of equipment which is their own personal property. Copy must be received at P.O. Box 88, East Melbourne, C.I. Vic., by 8th of the month preceding the month of the advertisement. Call signs are now permitted in Marnada. Dealers' advertisements not accepted in this column.

APACHE, SB10, Mohawk configuration: including SWR Meter, Matching Speaker, Co-ax Relay, Mike, Bug, and all necessary connectors. 300 watt p.e.p. linear if desired. Professionally wired and modified including Tone Oscillator, Band Width Filter, Vernier Carrier Null Controls, and ALC Circuit. 9 months old, mint condition. Value £850. Will sell complete or separately. What offers? Finance available. VK4RQ, Brisbane 95-2191, 18 Wendell St., Norman Park.

BARGAINS: Name your price. A.A. Radar No. 4, op. freq. around 150 Mc., consisting of 3 rack and panel cabinets with slide out units; for tx, rcvr. and control indicator; comprising high low volt. reg. p. supply, c.r.t. units large and small, high pwr. txr., fans, blowers etc., i.g.e. q.ty. h.v. transformers, switch gear, etc., many meters, selays, frac. motors, valves and spares, incl. rot. beam, reduction gear drive, fold. dipole ant., directional controls, etc. To sell complete or cannibalised. Inspect 57 Orchard Cres., Box Hill North. Tel. 878-7429. Bill Stevens, VK3ZZ.

BUY: Command Receiver, BC453. Must be absolutely as new. Russell, FJ 9268, Victoria.

MUST SELL: Woden UM2 Modulation Transformer; 200-230v. Auto Transformer 6 kva.; Wearite Tape Deck with Automatic Output Transformer and Oscillator. Call for details by July 20, collect. VK3AKZ, 24-6149.

SELL: Brand new American Astatic 10C ceramic microphone, 300 to 3,000 cycles, built especially for s.b. Cost £29 to land. Sell to best offer over £15. Literature on request. Ideal for DX communication. Also Vibroplex type bug key, £1/10/0, black crackle finish. Eccleston Electronics, 146a Cotham Road, Kew, Vic.

SELL: Two Command Tx 5.3-7 Mc. £22 each, one at 12/6. A "2 in line" Rx 24-13 Mc., with 100 kc. crystal and 560 kc. i.f. strip, 85/-, Lifeboat Tx with hand-power generator, 35/-, Genemotor 18v./450v. 0.05a. VK2AZF, FU 1254, Watsons Bay.

WANTED TO BUY: Communications Receiver, Ham Band, only, no disposals sets. Must be good last model. BW 2785, or 200 Elgar Rd., Box Hill, Vic.

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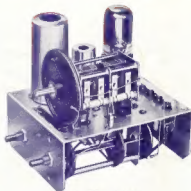
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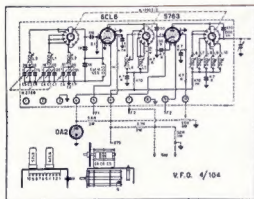
The basic circuitry of these V.F.O.'s. provide exciters of exceptional stability with ample R.F. output to drive most of the modern output tubes such as the 6146.

In each case the dial, provided with each V.F.O., is calibrated and adequately band spread on all bands.

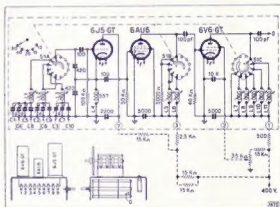
Our Communications Division is available to assist with any technical problems regarding Geloso V.F.O. transmitter design.



Cat. No. 4/102



Cat. No. N4/104. Six bands 80, 40, 20, 15, 11 and 10 metres. R.F. power output adequate for single 807 or 6146 (Class "C"). Amateur
Nett Price: £10/5/0 plus 12½% Sales Tax.



Cat. No. N4/102/V. Five bands 80, 40, 20, 15 and 10 metres. R.F. power output ample for two 807s or 6146 (Class "C"). Amateur
Nett Price: £9/12/0 plus 12½% Sales Tax.

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